IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A clamping device for clamping a workpiece between a clamping arm and an opposed clamping member by rotating the clamping arm supported for rotating on a body and applying a clamping force to the clamping arm, the device comprising:

a worm driving source, and a worm to be driven by [[a]] the worm driving source, for rotation about an axis on the body;

a worm wheel provided to a periphery of a rotating shaft of the clamping arm and engaged with the worm; and

a clamping force applying mechanism to be actuated in response to contact of the clamping arm with the workpiece supported by the clamping member to apply an axial force in a direction of the axis to the worm rotation of which has been stopped by the contact, wherein

the clamping arm is rotated by driving of the worm for rotation and

the axial force applied to the worm by the clamping force applying mechanism acts on the worm wheel as a pressing force in a direction of a tangent to the worm wheel to apply the clamping force to the clamping arm.

Claim 2 (Original): A clamping device according to claim 1, wherein the worm is provided for reciprocation between an initial position and a clamping force transmitting position on the axis and

the clamping force applying mechanism applies the axial force toward the initial position to the worm which has been displaced from the initial position to the clamping force

transmitting position by a reaction force from the worm wheel generated by a clamping operation of the clamping arm.

Claim 3 (Original): A clamping device according to claim 2, wherein the worm is elastically supported toward the initial position by a support spring disposed on the same axis and

the worm is displaced from the initial position to the clamping force transmitting position against the support spring by the reaction force from the worm wheel generated by the clamping operation of the clamping arm.

Claim 4 (Original): A clamping device according to claim 3, wherein the support spring is a disc spring.

Claim 5 (Original): A clamping device according to claim 1, wherein the clamping force applying mechanism includes a spring member disposed on the axis and applies a spring force of the spring member to the worm as the axial force.

Claim 6 (Previously Presented): A clamping device according to claim 5, wherein the spring member is the disc spring,

a flexure-spring force characteristic curve of the disc spring includes a region in which the spring force is substantially constant with respect to flexure variation, and the spring force in this region is applied to the worm as the axial force.

Claims 7-14 (Canceled).

Claim 15 (Original): A clamping device according to claim 1, the device further comprising:

an arm rotating driving source for driving the worm for rotation;

a clamping force generating driving source provided to the clamping force applying mechanism independently of the arm rotating driving source so as to actuate the clamping force applying mechanism; and

a contact sensor for detecting the contact of the clamping arm with the workpiece to output a signal for causing the clamping force generating driving source to operate, wherein

the clamping force generating driving source is caused to operate by the output signal from the contact sensor to actuate the clamping force applying mechanism to thereby apply the axial force to the worm.

Claim 16 (Original): A clamping device according to claim 15, wherein the arm rotating driving source is an electric motor and the clamping force generating driving source is an electromagnetic driving device utilizing an electromagnetic attracting force.

Claim 17 (Original): A clamping device according to claim 15 and further comprising a driving shaft supported for rotation about the axis and for sliding in a reciprocating manner in the direction of the axis on the body and connected to the arm rotating driving source, wherein

the worm is fixedly provided to a periphery of the driving shaft to be able to reciprocate between an initial position and a clamping force transmitting position on the axis and

the clamping force applying mechanism applies the axial force toward the initial position to the worm which has been displaced from the initial position to the clamping force

transmitting position by a reaction force from the worm wheel due to a clamping operation of the clamping arm.

Claim 18 (Original): A clamping device according to claim 17, wherein the clamping force applying mechanism includes the clamping force generating driving source, a spring member disposed on the axis, a plunger to be reciprocated in the direction of the axis by operation of the clamping force generating driving source, a sliding shaft passing through a center of the spring member and having one end fixed to the plunger and the other end formed with a shaft head portion with which one end of the spring member is in contact, and a spring seat with which the other end of the spring member is in contact and which supports the sliding shaft for sliding in the direction of the axis, the spring member being compressed between the shaft head portion and the spring seat by reciprocation of the plunger, wherein

the clamping force generating driving source operates in response to the output signal from the contact sensor and, as a result, the shaft head portion presses the driving shaft in the direction of the axis with the spring force of the spring member compressed between the shaft head portion and the spring seat to thereby apply the spring force to the worm as the axial force.

Claim 19 (Previously Presented): A clamping device according to claim 18, wherein the spring member is a disc spring,

a flexure-spring force characteristic curve of the disc spring includes a region in which the spring force is substantially constant with respect to flexure variation, and the spring force in this region is applied to the worm as the axial force.

Claim 20 (Original): A clamping device according to claim 17, wherein the worm is elastically supported toward the initial position by a support spring disposed on the same axis and

the worm is displaced from the initial position to the clamping force transmitting position against the support spring by the reaction force from the worm wheel due to the contact of the clamping arm with the workpiece.

Claim 21 (Original): A clamping device according to claim 20, wherein the contact sensor is for sensing that the worm has been displaced to the clamping force transmitting position.

Claim 22 (Original): A clamping device according to claim 20, wherein the support spring is a disc spring.